July, 2003

CURRICULUM VITA

Jacqueline N. Crawley, Ph.D.

Place and date of birth: Philadelphia, PA, USA, June 14, 1950
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EDUCATION

1967-71	B.A., Biology, University of Pennsylvania, Philadelphia, PA
1971-76	Ph.D., Zoology, University of Maryland, College Park, MD
1976-79	Postdoctoral, Yale University, New Haven, CT

PROFESSIONAL EMPLOYMENT

2003-present	Chief, Laboratory on Behavioral Neuroscience IRP, National Institute of Mental Health, Bethesda, MD
2003-present	Research Professor, Department of Psychology University of North Carolina at Chapel Hill
2001-2003	Chief, Section on Behavioral Genomics IRP, National Institute of Mental Health, Bethesda, MD
1993-2000	Chief, Section on Behavioral Neuropharmacology Experimental Therapeutics Branch, Intramural Research Program National Institute of Mental Health, Bethesda, MD
1996-Present	Adjunct Professor, Department of Pharmacology Georgetown University School of Medicine, Washington, DC
1993	Acting Deputy Director, Intramural Research Program

National Institute of Mental Health, Bethesda, MD

1983-93 Chief, Unit on Behavioral Neuropharmacology
Clinical Neuroscience Branch/Experimental Therapeutics Branch
National Institute of Mental Health, Bethesda, MD

1981-83 Senior Neurobiologist, Central Research and Development
E.I. DuPont de Nemours and Company, Wilmington, DE

1979-81 Pharmacology Research Associate Program Training Fellow
Clinical Psychobiology Branch, National Institute of Mental Health,
and National Institute of General Medical Sciences, Bethesda, MD

1976-79 Biological Sciences Training Program Fellow
Neuropychopharmacology Unit, Department of Psychiatry
Yale University School of Medicine, New Haven, CT

AWARDS AND HONORS

2002 NIMH Director's Merit Award

2002 AAALAC Board of Trustees member, representing the International Behavioral Neuroscience Society

2002 Howard Hughes Medical Research Institute Preceptor Award, Student Internship Program

2001 U.S. Department of Health and Human Services, Public Health Service,
National Institutes of Health, Special Act or Service Award in Recognition
and Appreciation of Special Achievement

2000 President, International Behavioral Neuroscience Society

2000 ISI Citation Classic
Crawley and Corwin, Biological actions of cholecystokinin, Peptides 14:731-755, 1994

1999 National Institute of Mental Health Special Service Award

1999 Summer Neuropeptide Conference Organizers Award

1998 Howard Hughes Medical Research Institute Student and Teacher
Internship Award

1993 Mathilde Solowey Lecture Award in Neuroscience

1993 National Institute of Mental Health Special Service Award

1987 President, Potomac Chapter, Society for Neuroscience

1979 Pharmacology Research Associate Training award,

National Institute of General Medical Sciences

1976 Biological Sciences Training Program Research award, Yale University School of Medicine

1975 Graduate Research Fellowship, University of Maryland

1971 Graduate Teaching Fellowship, University of Maryland

1967 Mayor's Scholarship, University of Pennsylvania

EDITORIAL BOARDS

Editorships:

Editor, *Neuropeptides*

Behavioral Neuroscience Chapter Editor,
Wiley Current Protocols in Neuroscience

Editorial Board memberships:

Behavioral Neuroscience
Behavioural Brain Research
Depression and Anxiety
Genes, Brain and Behavior
Journal of Molecular Neuroscience
Journal of Pharmacology and Experimental Therapeutics
Neuropsychopharmacology
Pharmacology Biochemistry and Behavior
Psychopharmacology
Trends in Pharmacological Sciences

PROFESSIONAL SERVICE: SCIENTIFIC SOCIETIES

2000-2001 President, International Behavioral Neuroscience Society

2001-2004 Co-Chair, Membership Committee, Society for Neuroscience

2000-2001 Program Committee member, International Behavioural and Neural Genetics Society

1993-1998 Organizer, Summer Neuropeptide Conference annual meetings

1998-present Membership Committee, member, Society for Neuroscience

1997-present Member, European Neuropeptide Club

1995-1998 Council Member, International Behavioral Neuroscience Society

1994-present Council Member, International Neuropeptide Society

1996-1999 Committee on the Use of Animals, member, American College of Neuropsychopharmacology

1991-1994 Credentials Committee, member, American College of Neuropsychopharmacology

PROFESSIONAL SERVICE: GRANT REVIEWING

1989-1992 Panel Member, National Science Foundation
Neural Mechanisms of Behavior Review Panel

Ongoing Ad Hoc for Grant Review Committees:

NIMH, NIDA, NIA, VA, NSF, New York Academy of Sciences, Naval Medical Research Institute, Canadian Medical Research Council, European Science 2000, US-Israeli Binational Science Foundation, International Science Foundation

PROFESSIONAL SERVICE: INTRAMURAL

NIH Committee for Priority Setting for Mouse Genomic and Genetic Resources, member, 2000-present

NIMH Tenure and Promotions Committee, member, 1999-present

NIH Behavioral and Social Sciences Research Coordinating Committee, Intramural Representative, 1998-present

NIMH Animal Care and Use Committee
Chair, 1998-1999
Chair, 1991-1992
Member, 1987-1992

NIMH Representative, 10A Animal Facilities Users Committee, 1990-present

NIMH Women Scientists Group
Chair, 1991-92
Chair, 1994-96
Member, 1990-present

NIMH Representative, NIH Women Scientists Advisory Committee, 1994-96

Working Group on Behavioral Assessment of Mutant Mice, NIH Office of Behavioral and Social Sciences Research, Chair, 1997-1999

Representative on Behavioral Studies, Mouse Phenotyping Facility Proposal, NIH Shared Resources Subcommittee of Scientific Directors, 1997-1998

Tenure-Track Search Committee, NIAAA, Chair, 1996

Tenure-Track Search Committees, NIMH, member, 1996-present

TEACHING

Lecturer, Neurobiology of Mental Illness, FAES Graduate Program at NIH, 2002-present

Lecturer, Georgetown University Graduate Course in Neuropharmacology, 1991-present

Lecturer, George Washington University Graduate Course in Neuropharmacology, 1988-present

Lecturer, New Tools in Biological Psychiatry, FAES Graduate Program at NIH, 1979-81, 1984-86

Member of Ph.D. Thesis Committees:

Linda Weiss-Wunder, University of Pennsylvania, 1990
Sharon Richardson, Howard University, 1991
Christian Heidebreder, University of Louvain, Belgium, 1992
Muriel Derrain, University Renes Descartes, France, 1992
James Auta, Georgetown University, 1993
Kimberly Simpson, Hahnemann University, 1998
Ruth Barientos, George Washington University, 2000
David Ault, George Washington University, 2000
Annika Thorsell, Karolinska Institutet, 2000

SCIENTIFIC ADVISORY BOARDS AND CONSULTANTSHIPS

Member, Scientific Advisory Board, Alzheimer Research Consortium, New York, NY, 2003-present

Member, Scientific Advisory Board, Methamphetamine Abuse Research Center, Oregon Health Sciences University, Portland, OR, 2003-present

Member, Scientific Advisory Board, Gladstone Institute of Neurological Disease, San Francisco, CA, 2003-present

Consultant to Center Grant, Johns Hopkins University, Dr. John Gearhardt, Principal Investigator, 1998-present

Consultant, Helicon Inc., 1997-2000

Consultant, R.W. Johnson Pharmaceutical Research Institute, 1996-99

Consultant to Program Project Grant, Georgetown University,
Dr. Richard Gillis, Principal Investigator, 1992-96

PROFESSIONAL AFFILIATIONS

American College of Neuropsychopharmacology

American Psychological Society

Behavior Genetics Association

International Behavioral and Neural Genetics Society

International Behavioral Neuroscience Society (Fellow)

International Neuropeptide Society (Founding Member)

Society for Behavioral Neuroendocrinology

Society for Neuroscience

NIH COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT

Pharmacopeia, Inc., Cranbury, NJ, 1999-2000

"Development of Biologically Active, Subtype-Selective, Nonpeptide Galanin Receptor Agonists and Antagonists"

NIH ROYALTIES RECEIVED

Dishevelled-1 null mutant mice licensed by:

Merck Neuroscience Research Centre, Terlings Park, Harlow, England, UK, 1999

Neurosciences Research, SmithKline Beecham, Harlow, England, UK, 2000

PEER-REVIEWED PUBLICATIONS

1. Lerner JN, Mellen SA, Waldron I, Factor RM: Neural redundancy and regularity of swimming
beats in the scyphozoan medusae. *J Exp Biol* 55:177-185, 1971.

2. Crawley JN, Schleidt WM, Contrera JF: Does social environment decrease propensity to fight in male mice? *Behav Biol* 15:73-83, 1975.

3. Crawley JN and Contrera JF: Intraventricular 6-hydroxydopamine lowers isolation-induced fighting behavior in male mice. *Pharmacol Biochem Behav* 4:381-384, 1976.

4. Crawley JN, Hattox SE, Maas JW, Roth RH: 3-Methoxy-4-hydroxyphenethyleneglycol increase in plasma after stimulation of the nucleus locus coeruleus. *Brain Res* 141:380-384, 1978.

5. Crawley JN, Maas JW, Roth RH: Increase in plasma MHPG following stimulation of the nucleus locus coeruleus. *Psychopharm Bull* 15:27-29, 1978.

6. Crawley JN, Laverty R, Roth RH: Clonidine reverses the increase of norepinephrine metabolite 3-methoxy-4-hydroxyphenethyleneglycol (MHPG) during morphine withdrawal in rats. *Eur J Pharmacol* 57:247-259, 1979.

7. Crawley JN, Roth RH, Maas JW: Locus coeruleus stimulation increases noradrenergic metabolite levels in rat spinal cord. *Brain Res* 166:180-184, 1979.

8. Crawley JN and Goodwin FK: Preliminary report of a simple animal behavior model for the anxiolytic effects of benzodiazepines. *Pharmacol Biochem Behav* 13:167-170, 1980.

9. Crawley JN, Maas JW, Roth RH: Evidence against specificity of electrical stimulation of the nucleus locus coeruleus in activating the sympathetic nervous system in the rat. *Brain Res* 183:301-311, 1980.

10. Crawley JN, Roth RH, Maas JW: Biochemical evidence for simultaneous activation of multiple locus coeruleus efferents. *Life Sci* 26:1373-1378, 1980.

11. Schleidt WM and Crawley JN: Patterns in the behavior of organisms. *J Soc Biol St*ruct 3:1-15, 1980.

12. Crawley JN: Neuropharmacologic specificity of a simple animal model for the behavioral actions of benzodiazepines. *Pharmacol Biochem Behav* 15:695-699, 1981.

13. Crawley JN, Hays SE, O'Donohue TL, Paul SM: Neuropeptide modulation of social and exploratory behaviors in laboratory rodents. *Peptides* 2:123-129, 1981.

14. Crawley JN, Hays SE, Paul SM: Vagotomy abolishes the inhibitory effects of cholecystokinin on rat exploratory behavior. *Eur J Pharmacol* 73:379-380, 1981.

15. Crawley JN, Hays SE, Paul SM, Goodwin FK: Cholecystokinin reduces exploratory behavior in mice. *Physiol Behav* 27:408-411, 1981.

16. Crawley JN, Marangos PJ, Paul SM, Skolnick P, Goodwin FK: Purine benzodiazepine interaction: Inosine reverses diazepam-induced stimulation of mouse exploratory behavior. *Science* 22:725-727, 1981.

17. Crawley JN, Patel J, Marangos PJ: Behavioral characterization of two long-lasting adenosine analogs: Sedative properties and interaction with diazepam. *Life Sci* 29:2623-2630, 1981.

18. Skolnick P, Paul SM, Crawley JN, Rice K, Barker S, Weber R, Cain M, Cook J: 3-Hydroxymethyl-beta-carboline antagonizes some pharmacologic actions of diazepam. *Eur J Pharmacol* 69:525-528, 1981.

19. Swann AC, Crawley JN, Grant SJ, Maas JW: Noradrenergic stimulation in vivo increases (Na^+,K^+)-adenosine triphosphate activity. *Life Sci* 28:251-256, 1981.

20. Cain M, Wever RW, Guzman F, Cook JM, Barker SA, Rice KC, Crawley JN, Paul SM, Skolnick P: Beta-carbolines: Synthesis, neurochemical, and pharmacological actions on brain benzodiazepine receptors. *J Med Chem* 25:1081-1091, 1982.

21. Crawley JN and Davis LG: Baseline exploratory activity predicts anxiolytic responsiveness to diazepam in five mouse strains. *Brain Res Bull* 8:609-612, 1982.

22. Crawley JN, Marangos JN, Stivers PJ, Goodwin FK: Chronic clonazepam administration induces benzodiazepine receptor subsensitivity. *Neuropharmacology* 21:85-90, 1982.

23. Crawley JN, Rojas-Ramirez JA, Mendelson WB: The role of central and peripheral cholecystokinin in mediating appetitive behaviors. *Peptides* 3:535-538, 1982.

24. Crawley JN, Szara S, Creveling CR, Pryor GT: Development and evaluation of a video-monitored, computer-assisted system for automatic recording of social and exploratory behavior of small animals. *J Neurosci Methods* 5:235-247, 1982.

25. Marangos PJ and Crawley JN: Chronic benzodiazepine treatment increases [^{3}H] muscimol binding in mouse brain. *Neuropharmacology* 21:81-84, 1982.

26. Moody TW, Crawley JN, Jensen RT: Pharmacology and neurochemistry of bombesin-like peptides. *Peptides* 3:559-563, 1982.

27. Rojas-Ramirez JA, Crawley JN, Mendelson WB: Electroencephalographic analysis of the sleep-inducing actions of cholecystokinin. *Neuropeptides* 3:129-138, 1982.

28. Blumstein LK and Crawley JN: Further characterization of a simple, automated exploratory model for the anxiolytic effects of benzodiazepines. *Pharmacol Biochem Behav* 18:37-40, 1983.

29. Charlton CG, Miller RL, Crawley JN, Handelmann GE, O'Donohue TL: Secretin modulation of behavioral and physiological functions in the rat. *Peptides* 4:739-742, 1983.

30. Crawley JN: Divergent effects of cholecystokinin, bombesin, and lithium on rat exploratory behaviors. *Peptides* 4:405-410, 1983.

31. Crawley JN: Preliminary report of a new rodent separation model of depression. *Psychopharm Bulletin* 19:537-541, 1983.

32. Crawley JN and Beinfeld MC: Rapid development of tolerance to the behavioral actions of cholecystokinin. *Nature* 302:703-706, 1983.

33. Crawley JN and Moody TW: Anxiolytics block excessive grooming behavior induced by ACTH 1-24 and bombesin. *Brain Res Bull* 10:399-401, 1983.

34. Crawley JN, Patel J, Marangos PJ: Adenosine uptake inhibitors potentiate the sedative effects of adenosine. *Neurosci Lett* 36:169-174, 1983.

35. Crawley JN and Schwaber JS: Nucleus tractus solitarius lesions block the behavioral actions of cholecystokinin. *Peptides* 4:743-747, 1983.

36. Skolnick P, Paul S, Crawley J, Lewin E, Lippa A, Clody D, Minck KO, Saiko O, Irmscher K: Selective antagonism of the anxiolytic action of diazepam and chlordiazepoxide by two novel pyrazolopyridines, EMD 39593 and EMD 41717. *Eur J Pharmacol* 88:319-327, 1983.

37. Crawley JN: Cholecystokinin accelerates the rate of habituation to a novel environment. *Pharmacol Biochem Behav* 20:23-27, 1984.

38. Crawley JN: Evaluation of a proposed hamster separation model of depression. *Psychiatry Res* 11:35-47, 1984.

39. Crawley JN: Investigation of a new rodent separation model of depression. *Prog Neuropsychopharmacol Biol Psychiatry* 8:447-457, 1984.

40. Crawley JN, Blumstein LK, Baldino F: Anxiolytic-like properties of fominoben. *Eur J Pharmacol* 97:277-281, 1984.

41. Crawley JN, Hommer DW, Skirboll LR: Behavioral and neurophysiological evidence for a facilatory interaction between co-existing transmitters: cholecystokinin and dopamine. *Neurochem Int* 6:755-760. 1984.

42. Crawley JN, Kiss JZ, Mezey E: Bilateral midbrain transections block the behavioral effects of cholecystokinin on feeding and exploration in rats. *Brain Res* 322:316-321, 1984.

43. Crawley JN, Ninan PT, Pickar D, Chrousos GP, Skolnick P, Paul SM: Behavioral and physiological responses to benzodiazepine receptor antagonists. *Psychopharmacol Bull* 403:20-24, 1984.

44. Crawley JN and Schwaber JS: Abolition of the behavioral effects of cholecystokinin following bilateral radio frequency lesions of the parvicellular subdivision of the nucleus tractus solitarius. *Brain Res* 295:289-299, 1984.

45. Crawley JN, Skolnick P, Paul SM: Absence of intrinsic actions of benzodiazepine antagonists on a mouse exploratory model of anxiety. *Neuropharmacology* 23:531-537, 1984.

46. Crawley JN, St Pierre S, Gaudreau P: Analysis of the behavioral activity of C- and N-terminal fragments of cholecystokinin octapeptide. *J Pharmacol Exp Therap* 230:438-444, 1984.

47. Hirsch MD, O'Donohue TL, Wilson R, Sawyer TK, Hruby VJ, Hadley ME, Cody Wl, Knittel JJ, Crawley JN: Structural-conformational modifications of α-MSH/ACTH4-10 provide melanaotropin analogues with highly potent behavioral activities. *Peptides* 5:1197-1201, 1984.

48. Skolnick P, Ninan P, Insel T, Crawley JN, Paul S: A novel chemically-induced animal model of human anxiety. *Psychopathology* 17:25-36, 1984.

49. Squires RF, Saederup E, Crawley JN, Skolnick P, Paul SM: Convulsant potencies of tetrazoles are highly correlated with actions on GABA/benzodiazepine/picrotoxin receptor complexes in brain. *Life Sci* 35:1439-1444, 1984.

50. Yachnis AT, Crawley JN, Jensen RT, Moody TW: The antagonism of bombesin in the CNS by substance P analogues. *Life Sci* 35:1963-1969, 1984.

51. Crawley JN: A monoamine oxidase inhibitor reverses the "separation syndrome" in a new hamster separation model of depression. *Eur J Pharmacol* 112:129-133, 1985.

52. Crawley JN: Cholecystokinin potentiates dopamine-mediated behaviors in the nucleus accumbens, a site of CCK-DA coexistence. *Psychopharmacol Bull* 21:523-527, 1985.

53. Crawley JN: Clarification of the behavioral functions of peripheral and central cholecystokinin: two separate pools. *Peptides* 6:129-136, 1985.

54. Crawley JN: Neurochemical investigation of the afferent pathway from the vagus nerve to the nucleus tractus solitarius in mediating the "satiety syndrome" induced by systemic cholecystokinin. *Peptides* 6:133-138, 1985.

55. Crawley JN, Hommer DW, Skirboll LR: Topographical analysis of nucleus accumbens sites at which cholecystokinin potentiates dopamine induced hyperlocomotion in the rat. *Brain Res* 355:337-341, 1985.

56. Crawley JN and Kiss JZ: Paraventricular nucleus lesions abolish the inhibition of feeding induced by systemic cholecystokinin. *Peptides* 6:927-935, 1985.

57. Crawley JN, Ninan PT, Pickar D, Chrousos GP, Linnoila M, Skolnick P, Paul SM: Neuropharmacological antagonism of the β-carboline-induced "anxiety" response in rhesus monkeys. *J. Neurosci* 5:477-485, 1985.

58. Crawley JN, Olschowka JA, Diz DI, Jacobowitz DM: Behavioral investigation of the coexistence of substance P, corticotropin releasing factor, and acetylcholinesterase in lateral dorsal tegmental neurons projecting to the medial frontal cortex of the rat. *Peptides* 6:891-901, 1985.

59. Crawley JN, Stivers JA, Blumstein LK, Paul SM: Cholecystokinin potentiates dopamine-mediated behaviors in the nucleus accumbens. *J Neurosci* 5:1972-1983, 1985.

60. Drugan RC, Maier SF, Skolnick P, Paul SM, Crawley JN: An anxiogenic benzodiazepine receptor ligand induces learned helplessness. *Eur J Pharmacol* 113:453-457, 1985.

61. Hommer DW, Palkovits M, Crawley JN, Paul SM, Skirboll LR: CCK-induced excitation in the substantia nigra: Evidence for peripheral and central components. *J Neurosci* 5:1387-1392, 1985.

62. Angel I, Kiss A, Stivers JA, Skirboll LR, Crawley JN, Paul SM: Regulation of [^{3}H]mazindol binding to subhypothalamic areas: Involvement in glucoprivic feeding. *Brain Res Bull* 17:873-877, 1986.

63. Crawley JN, Glowa JR, Majewska MD, Paul SM: Anxiolytic activity of an endogenous adrenal steroid. *Brain Res* 398:382-385, 1986.

64. Crawley JN, Stivers JA, Hommer DW, Skirboll LR, Paul SM: Antagonists of central and peripheral behavioral actions of cholecystokinin. *J Pharmacol Exp Ther* 236:320-330, 1986.

65. Crawley JN, Stivers JA, Martin JV, Mendelson WB: Cholinergic induction of seizures in the rat prefrontal cortex. *Life Sci* 38:2347-2354, 1986.

66. Drugan RC, Basile AS, Crawley JN, Paul SM, Skolnick P: Inescapable shock reduces [^{3}H]Ro5-4864 binding to "peripheral-type" benzodiazepine receptors in the rat. *Pharmacol Biochem Behav* 24:1673-1677, 1986.

67. Drugan RC, Skolnick P, Paul SM, Crawley JN: Low doses of muscimol produce anticonflict actions in the lateral septum of the rat. *Neuropharmacology* 25:203-205, 1986.

68. Hommer DW, Stoner G, Crawley JN, Paul SM, Skirboll LR: Cholecystokinin-dopamine coexistence: electrophysiological actions corresponding to cholecystokinin receptor subtype. *J Neurosci* 6:3039-3042, 1986.

69. Smith CB and Crawley JN: Anxiolytic action of CGS 9896 on mouse exploratory behavior. *Eur J Pharmacol* 132:259-262, 1986.

70. Suzdak PD, Glowa JR, Crawley JN, Schwartz RD, Skolnick P, Paul SM: A selective imidazobenzodiazepine antagonist of ethanol in the rat. *Science* 234:1243-1247, 1986.

71. Wolkowitz O, Sutton M, Koulu M, LaBarca R, Wilkinson L, Doran A, Pickar D, Crawley J: Chronic corticosterone administration in rats: Behavioral and biochemical evidence of increased central dopaminegic activity. *Eur J Pharmacol* 122:329-338, 1986.

72. Angel I, Stivers JA, Paul SM, Crawley JN: Site of action of anorectic drugs: Glucoprivic versus food deprivation induced-feeding. *Pharmacol Biochem Behav* 27:291-297, 1987.

73. Blumstein LK, Crawley JN, Davis LG, Baldino F: Neuropeptide modulation of apomorphine-induced stereotyped behavior. *Brain Res* 404:293-300, 1987.

74. Drugan RC, Basile AS, Crawley JN, Paul SM, Skolnick P: "Peripheral" benzodiazepine binding sites in the Maudsley reactive rat: Selective decrease confined to peripheral tissues. *Brain Res Bull* 18:143-145, 1987.

75. Drugan RC, Crawley JN, Paul SM, Skolnick P: Buspirone attenuates learned helplessness behavior in rats. *Drug Devel Res* 10:63-67, 1987.

76. Kaltwasser MT and Crawley JN: Oxytocin and cholecystokinin induce grooming behavior in the ventral tegmentum of the rat. *Brain Res* 426:1-7, 1987.

77. Kaltwasser MT, Petrack B, Crawley JN: Potency of CR 1409, a new proglumide analog, on cholecystokinin-mediated behaviors and receptor binding. *Neurochem Int* 10:547-553, 1987.

78. Crawley JN: Attenuation of dark-induced hyperlocomotion by a cholecystokinin antagonist in the nucleus accumbens. *Brain Res* 473:398-400, 1988.

79. Drugan RC, Basile AS, Crawley JN, Paul SM, Skolnick P: Characterization of stress-induced alterations in [^{3}H]Ro5-4864 binding to peripheral benzodiazepine receptors in rat heart and kidney. *Pharmacol Biochem Behav* 30:1015-1020, 1988.

80. Khosla S and Crawley JN: Potency of L-364,718 as an antagonist of the behavioral effects of peripherally administered cholecystokinin. *Life Sci* 42:153-159, 1988.

81. Mastropaolo J and Crawley JN: Behavioral evidence for increased cholinergic receptor sensitivity after nucleus basalis magnocellularis lesions in the rat. *Eur J Pharmacol* 153:301-304, 1988.

82. Mastropaolo J, Nadi NS, Ostrowski NL, Crawley JN: Galanin antagonizes acetylcholine on a memory task in basal forebrain-lesioned rats. *Proc Natl Acad Sci USA* 85:9841-9845, 1988.

83. Merali Z, Merchant CA, Crawley JN, Coy DH, Heinz-Erian P, Jensen RT, Moody TW: (D-Phe^{12}) bombesin and substance P analogues function as central bombesin receptor antagonists. *Synapse* 2:282-287, 1988.

84. Stivers JA and Crawley JN: Substance P antagonists block carbachol-induced "boxing" behavior at a site of coexistence in the rat prefrontal cortex. *Peptides* 9:117-121, 1988.

85. Stivers JA, Kaltwasser MT, Hill PS, Hruby VJH, Crawley JN: Ventral tegmental oxytocin induces grooming. *Peptides* 9:223-231, 1988.

86. Stivers JA, Skirboll LR, Long R, Crawley JN: Anatomical analysis of frontal cortex sites at which carbachol induces "boxing"-like seizures in the rat. *Pharmacol Biochem Behav* 30:129-136, 1988.

87. Suzdak PD, Glowa JR, Crawley JN, Skolnick P, Paul SM: Response to KT Britton et al. *Science* 239:649-650, 1988.

88. Suzdak PD, Paul SM, Crawley JN: Effects of Ro15-4513 and other benzodiazepine receptor inverse agonists on alcohol-induced intoxication in the rat. *J Pharmacol Exp Ther* 245:880-885, 1988.

89. Crawley JN: Microinjection of cholecystokinin into the rat ventral tegmental area potentiates dopamine-induced hypolocomotion. *Synapse* 3:346-355, 1989.

90. Drugan RC, Skolnick P, Paul SM, Crawley JN: A pretest procedure reliably predicts performance in two animal models of inescapable stress. *Pharmacol Biochem Behav* 33:649-654, 1989.

91. Drugan RC, Morrow AL, Weizman R, Weizman A, Deutsch SI, Crawley JN, Paul SM: Stress-induced behavioral depression in the rat is associated with a decrease in GABA-mediated chloride ion flux and brain benzodiazepine receptor occupancy. *Brain Res* 487:45-51, 1989.

92. Fisone G, Berthold M, Bedecs K, Unden A, Bartfai T, Bertorelli R, Consolo S, Crawley JN, Martin B, Nilsson S, Hökfelt T: N-terminal galanin-(1-16) fragment is an agonist at the hippocampal galanin receptor. *Proc Natl Acad Sci USA* 86:9588-9591, 1989.

93. Glowa JR, Crawley J, Suzdak PD, Paul SM: Ethanol and the GABA receptor agonist Ro 15-4513. *Pharmacol Biochem Behav* 31:767-772, 1989.

94. Mefford IN, Lawrenz AL, Hsiao JK, Crawley JN: Activation in young rats induced by LY134046, an inhibitory of phenylethanolamine N-methyltransferase. *Psychopharmacology* 98:240-244, 1989.

95. Zohar J, Murphy DL, Crawley JN: Hyperlocomotion induced by dopamine or cholecystokinin+dopamine in the nucleus accumbens is not modified by chronic lithium treatment. *Prog Neuropsychopharmacol Biol Psychiat* 13:775-779, 1989.

96. Austin MC, Cottingham SL, Paul SM, Crawley JN: Tyrosine hydroxylase and galanin mRNA levels in locus coeruleus neurons are increased following reserpine administration. *Synapse* 6:351-357, 1990.

97. Consolo C, Palazzi E, Bertorelli R, Fisone G, Crawley J, Hökfelt T, Bartfai T: Functional aspects of acetylcholine-galanin coexistence in the brain. *Prog Brain Res* 84:279-287, 1990.

98. Cottingham Sl, Pickar D, Shimotake TK, Montpied P, Paul SM, Crawley JN: Tyrosine hydroxylase and cholecystokinin mRNA levels in the substantia nigra, ventral tegmental area, and locus coeruleus are unaffected by acute and chronic haloperidol administration. *Cell Mol Neurobiol* 10:41-50, 1990.

99. Crawley JN, Austin MC, Fiske SM, Martin B, Consolo S, Berthold M, Langel Ü, Fisone G, Bartfai T: Activity of centrally administered galanin fragments on stimulation of feeding behavior and on galanin receptor binding in the rat hypothalamus. *J Neurosci* 10:3695-3700, 1990.

100. Dauge V, Bohme GA, Crawley JN, Durieux C, Stutzmann JM, Feger J, Blanchard JC, Roques BP: Investigation of behavioral and electrophysiological responses induced by selective stimulation of CCKB receptors using a new highly potent CCK analog: BC 264. *Synapse* 6:73-80, 1990.

101. De Mesquita S, Beinfeld MC, Crawley JN: Microdialysis as an approach to quantitate the release of neuropeptides. *Prog Neuropsychopharmacol Biol Psychiat* 14:S5-S15, 1990.

102. Laitinen K, Crawley JN, Mefford IN, De Witte PH: Neurotensin and cholecystokinin microinjected into the ventral tegmental area modulate microdialysate concentrations of dopamine and metabolites in the posterior nucleus accumbens. *Brain Res* 523:342-346, 1990.

103. Crawley JN, Fiske SM, Durieux C, Derrien M, Roques BP: Centrally administered cholecystokinin suppresses feeding through a peripheral-type receptor mechanism. *J Pharmacol Exp Ther* 257:1076-1080, 1991.

104. Jaskiw GE, Weinberger DR, Crawley JN: Microinjection of apomorphine into the prefrontal cortex of the rat reduces dopamine metabolite concentrations in microdialysate from the caudate nucleus. *Biol Psychiatry* 29:703-706, 1991.

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50. Crawley JN: Behavioral phenotyping of transgenic and knockout mice: experimental design and evaluation of general health, sensory functions, motor abilities, and specific behavioral tests. *Brain Res* 835: 18-26, 1999.

51. Paylor R, Lijam N, McDonald MP, Crawley JN, Sussman DJ, Wynshaw-Boris A: Behavioral analysis of *Dvl1*-deficient mice reveals a role for the *Dvl1* gene in social behaviors and sensorimotor gating. In*: Handbook of Molecular-Genetic Techniques for Brain and Behavior Research*, WE Crusio and RT Gerlai, (Eds), Elsevier Science, pp. 352-363, 1999.

52. Crawley JN: Evaluating anxiety in rodents. In: *Molecular Genetic Techniques for Behavioral Neuroscience*, WE Crusio and RT Gerlai, Eds., Elsevier Science B.V., pp. 667-673, 1999.

53. Crawley, JN: The role of galanin in feeding behavior. *Neuropeptides* 33: 369-375, 1999.

54. Crawley JN: Behavioral phenotyping of transgenic and knockout mice: Experimental design and evaluation of general health, sensory functions, motor abilities, and specific behavioral tests. *ILAR Journal* 41: 136-143, 2000.

55. Crawley JN: Behavioral characterization of transgenic and knockout mice. In: *Genetic Manipulation of Receptor Expression and Function*, D Accili (Ed), Wiley-Liss, New York, pp. 23-38, 2000.

56. Holmes A, Crawley JN: Promises and limitations of transgenic and knockout mice in modeling psychiatric symptoms. In: *Contemporary Issues in Modeling Psychopathology*, MS Myslobodsky and I Weiner (Eds), Kluwer Academic Publishers, Boston, pp 55-77, 2000.

57. Crawley JN: Strategies for behavioral phenotyping of transgenic and knockout mice. In: *Pathology of Genetically Engineered Mice*, JM Ward, JF Mahler, RR Maronpot, JP Sundberg (Eds), Iowa State University Press, pp 233-238, 2000.

58. Crawley JN: Behavioral phenotyping of mutant mice. *New Technologies in the Life Sciences, Twenty Fifth Anniversary of the Trends Journals*, Elsevier Science, pp 18-22, 2000.

59. Wrenn CC, Crawley JN: Pharmacological evidence supporting a role for galanin in cognition and affect. *Prog Neuro-Psychopharm Biol Psychiat*, 25: 283-289, 2001.

60. Counts SE, Perez SE, Kahl U, Bartfai T, Bowser R, Deecher DC, Mash DC, Crawley JN, Mufson EJ: Neurobiology of galanin: mechanisms and therapeutic potential for Alzheimer's disease. CNS Drug Reviews 7:445-470, 2001.

61. Crawley JN, Galanin. Wiley Encyclopedia of Molecular Medicine, John Wiley & Sons, Inc., New York, pp 1363-1364, 2002.

62. Gomeza J, Yamada M, Duttaroy A, Zhang W, Makita R, Miyakawa T, Crawley J, Zhang L, Shannon H, Bymaster FP, Felder C, Deng C, Wess J: Muscarinic acetylcholine receptor knockout mice: phenotypical analysis and clinical implication. In: *Trends in Drug Research III*, H. van der Goot (Ed.), Pharmacochemistry Library, Elsevier, Amsterdam, 32: 97-113, 2002.

63. Crawley JN, Mufson EJ, Hohmann JG, Teklemichael D, Steiner RA, Holmberg K, Blakemann KH, Xu X-J, Wiesenfeld-Hallin Z, Bartfai T, Hökfelt T: Galanin overexpressing transgenic mice. Neuropeptides *Special Issue on Transgenics and Knockouts with Mutations in Genes for Neuropeptides and their Receptors*, 36:145-156, 2002.

64. Crawley JN: Behavioral phenotyping of rodents. Comparative Medicine *Special Issue on Current Concepts in the Application of Genetics, Genomics, and Gene Therapy to Animal-Related Research*, 2003, in press.

INVITED LECTURES, 1996-present

1. University of Kentucky Department of Anatomy and Neurobiology, "Galanin-acetylcholine interactions in rodent memory paradigms relevant to Alzheimer's disease." February 6, 1996.

2. Keystone Symposium on Neural Peptides, "Inhibitory actions of galanin on rodent memory tasks relevant to Alzheimer's disease," February 12, 1996.

3. NIH Integrative Neuroscience Seminar Series, "Galanin inhibits performance on memory tasks in rodent models of Alzheimer's disease," March 28, 1996.

4. Schering-Plough Research Institute, "Behavioral actions of galanin and galanin antagonists in rodent feeding and memory paradigms," April 18, 1996.

5. NIH Workshop on Behavioral Phenotypes of Inbred Strains of Mice, "Anxiety-related behaviors and diazepam response in inbred mouse strains," Workshop organized by R Paylor and JN Crawley, April 24, 1996.

6. Georgetown University Department of Pharmacology Seminar Series, "Inhibitory Actions of Galanin on Cholinergic Functions in Rodent Memory Tasks: Relevance to Alzheimer's disease," May 7, 1996.

7. R.W. Johnson Pharmaceutical Research Institute, "Galanin-acetylcholine interactions in memory and Alzheimer's disease," May 16, 1996.

8. Canadian College of Neuropsychopharmacology Plenary Lecture, "Galanin-acetylcholine interactions in rodent memory tasks and Alzheimer's disease," June 4, 1996.

9. Merck Research Laboratories, "Galanin receptor antagonists in rodent feeding and memory paradigms," July 23, 1996.

10. Astra Arcus AB Stockholm, "Feeding, learning and memory profiles of galanin," September 9, 1996.

11. Pennsylvania State University Neuroscience Seminar Series, "Inhibitory actions of galanin in rodent memory paradigms," October 18, 1996.

12. National Institute of Mental Health Satellite Symposium, Society for Neuroscience Annual Meeting, "Opportunities for behavioral neuroscientists to investigate the behavioral phenotypes of transgenic and knockout mice," November 15, 1996.

13. Society for Behavioral Neuroendocrinology Annual Meeting, "Transgenic/knockout approaches to investigate genes mediating normal and abnormal social behaviors," May 28, 1997.

14. National Institute on Drug Abuse Satellite Symposium, Society for Neuroscience Annual Meeting, "Behavioral phenotyping of mutant mice," October 29, 1997.

15. Merck Frosst Research, Dorval, Canada, "Behavioral actions of galanin," March 13, 1998.

16. Wenner-Gren Foundations International Symposium, Stockholm, Sweden, Galanin: Basic Research Discoveries and Therapeutic Implications, "Galanin inhibits performance on rodent memory tasks," May 5, 1998.

17. First Joint Meeting of the European Neuropeptide Club and the Summer Neuropeptide Conference, Gent, Belgium, "Strategies for assessing learning and memory in transgenic and knockout mice," May 6, 1998.

18. NIH Genetics Interest Group meeting, "Strategies for behavioral phenotyping of transgenic and knockout mice," June 9, 1998.

19. Neurogen Corporation, Branford, CT, "Actions of central galanin on feeding and memory," August 4, 1998.

20. Merck Neuroscience Research Center Symposium, The Role of Transgenic Mouse Models in Furthering Our Understanding of the Processes Underlying Learning and Memory, Terlings Park, England, UK, "Inbred strains of mice: Caveats on the role of background genes in evaluating the behavioral phenotype of transgenic and knockout mice on learning and memory tasks," October 16th, 1998.

21. Brain Research Interactive Conference, Satellite to the Society for Neuroscience Annual Meeting, Knockouts and Mutants: Genetically Dissecting Brain and Behavior, San Diego, CA, "Experimental design and evaluation of general health, sensory functions, motor abilities, and specific behavioral paradigms in transgenic and knockout mice," November 5th, 1998.

22. Bourne Laboratory, Department of Psychiatry, Cornell Medical Center, White Plains, NY, "Strategies for behavioral phenotypes of transgenic and knockout mice," November 24, 1998.

23. Oak Ridge National Laboratory, Oak Ridge, TN, "Strategies for behavioral phenotyping of mutant mice," December 11, 1998.

24. Neuroscience Seminar Series, Uniformed Services University of the Health Sciences, Bethesda, MD, "Behavioral phenotyping of transgenic and knockout mice with mutations in genes relevant to learning and memory," January 6th, 1999.

25. Behavioral and Social Sciences Interest Group Seminar, Bethesda, MD, "The misbehaving gene," January 14th, 1999.

26. Neuroscience Faculty Seminar Series, Texas A&M University, College Station, TX, "Behavioral phenotyping of transgenic and knockout mice," February 3rd, 1999.

27. Neuroscience Program Seminar Series, University of Michigan, Ann Arbor, MI, "Behavioral phenotyping of transgenic and knockout mice with mutations in genes relevant to learning and memory," February 15th, 1999.

28. National Cancer Institute Symposium, Pathology of Genetically-Engineered Mice, "Strategies for behavioral phenotyping of transgenic and knockout mice," Bethesda, MD, February 25th, 1999.

29. Hoffmann-La Roche, Basel, Switzerland, "Rodent learning and memory tasks relevant to aging and Alzheimer's disease," March 2, 1999.

30. Tenth Annual Spring Brain Conference, Sedona, AZ, "Inhibitory actions of galanin on rodent memory tasks relevant to Alzheimer's disease," March 11th, 1999.

31. Purdue University Special Lectures in Neuroscience Series, West Lafayette, IN, "Inhibitory actions of galanin in rodent memory tasks: relevance to Alzheimer's disease;" and Neuroscience Graduate Program Lecture Series, "Behavioral phenotyping of transgenic and knockout mice," April 28th and 29th, 1999.

32. NIH Alzheimer's Interest Group, Bethesda, MD, "Inhibitory actions of galanin in rodent memory tasks relevant to Alzheimer's disease," Bethesda, MD, May 6th, 1999.

33. University of Washington Physiology Seminar, Seattle, WA, "Strategies for behavioral phenotyping of transgenic and knockout mice," June 2, 1999.

34. Lilly Neuroscience Seminar, Indianapolis, IN, "Strategies for behavioral phenotyping of transgenic and knockout mice," November 10th, 1999.

35. US/Japan Meeting, National Academy of Sciences, Washington, DC, "Defining phenotype in genetically engineered mice," November 15th, 1999.

36. International Behavioural and Neural Genetics Society Annual Meeting, Brighton, UK, "What's wrong with my mouse? Behavioral phenotyping strategies and applications." June 22, 2000.

37. Summer Neuropeptide Conference, Ste. Adele, Quebec, Canada, "Learning and memory deficits in galanin-overexpressing transgenic mice," July 23rd, 2000.

38. Nobel Forum Minisymposium, In Search of Molecular Substrates of Behavior, Stockholm Sweden, "Strategies for behavioral phenotyping of transgenic and knockout mice," October 5, 2000.

39. Scripps Research Institute, Neuroscience Seminar Series, La Jolla, CA, "Behavioral phenotype of galanin transgenic mice," February 28, 2001.

40. University of North Carolina, Neurodevelopment Disorders Research Center seminar, Chapel, Hill, NC, "Strategies for behavioral phenotyping of mouse models," April 4th, 2001.

41. International Behavioral Neuroscience Society Annual Meeting, Presidential Lecture, Cancun, Mexico, "Galanin: An inhibitory neuropeptide overexpressed in Alzheimer's disease impairs learning and memory in rats and transgenic mice," April 27, 2001.

42. Karolinska Institutet, The Mouse in Cognitive Neuroscience: Implications for Functional Genomics, Postgradaute Course in Behavioural Neuroscience, Stockholm, Sweden, "Overall strategy for mouse behavioral phenotyping," May 9, 2001; "Assessment of anxiety tasks in mice. What do they predict?" May 10th, 2001.

43. University of Helsinki Symposium on Phenotypic Analysis of Transgenic Mice, Helsinki, Finland, "Inhibitory actions of galanin in memory tasks relevant to Alzheimer's disease," May 12th, 2001.

44. Bio 2001, Symposium on Methods for Phenotypic Evaluation of Transgenic and Knockout Mice, San Diego, CA, "Methods for evaluating the behavioral phenotype of transgenic and knockout mice," June 27th, 2001

45. EMBO/FENS Practical Course on Mouse Transgenics and Behaviour, University of Zurich, Zurich, Switzerland, "What's wrong with my mouse? Behavioural phenotyping strategies and applications," July 18th, 2001.

46. Swiss Federal Institute of Technology Seminar, Zurich, Switzerland, "Selective memory deficits in galanin-overexpressing transgenic mice," July 19th, 2001.

47. The Jackson Laboratory 42nd Annual Short Course in Medical and Experimental Mammalian Genetics, Bar Harbor, ME, "Mouse behavioral genetics," July 24th, 2001.

48. George Washington University Neuroscience Seminar Series, Washington DC, "Memory deficits in galanin overexpressing transgenic mice: relevance to Alzheimer's disease," September 10th, 2001.

49. University of Pennsylvania Neuroscience, David Mahoney Institute of Neurological Sciences Seminar Series, Philadelphia, PA, "Memory deficits in a galanin overexpressiong transgenic mouse model of Alzheimer's disease," October 3rd, 2001

50. Joslin Diabetes Center, Harvard University, Boston, MA, "Strategies for behavioral phenotyping of transgenic and knockout mice," November 1st, 2001.

51. Tenth Annual Puerto Rico Neuroscience Conference, San Juan, PR, "Strategies for behavioral phenotyping of transgenic and knockout mice," November 30th, 2001.

52. Howard University Department of Pharmacology Seminar Series, Washington, DC, "Memory deficits in galanin overexpressing transgenic mice: Relevance to Alzheimer's disease," January 9th, 2002.

53. University of North Carolina Department of Psychology Seminar Series, "Memory impairments in galanin overexpressing transgenic mice: Relevance to Alzheimer's disease. January 16th, 2002.

54. National Academy of Sciences Institute for Laboratory Animal Research, Workshop on Guidelines for the Use of Animals in Neuroscience and Behavioral Research, Washington, DC, "Transgenic animals," February 27th, 2002.

55. Synaptic Pharmaceuticals Seminar Series, Paramus, NJ, "New development in the study of galanin knockout animals," March 13, 2002.

56. American College of Laboratory Animal Medicine 2002 Forum, Genetics, Genomics, and Gene Therapy, Savannah, GA, "Behavioral phenotyping in rodents," April 15th, 2002.

57. Gladstone Institute of Neurological Disease, San Francisco, CA, "Strategies for behavioral phenotyping of transgenic and knockout mice," April 25th, 2002.

58. National Institute of Mental Health Intramural Research Program Senior Investigators Seminar Series, NIMH/IRP Fellows Committee, Bethesda, MD, "Memory deficits in galanin overexpressing transgenic mice: Relevance to Alzheimer's disease," May 15, 2002.

59. National Institutes of Health Conference, Planning the Design of an Animal Research Facility at the NIH, Bethesda, MD, "Introduction to rodent behavioral studies," June 18th, 2002.

60. The Jackson Laboratory Short Course on Pathobiology of the Modern Laboratory Mouse, Bar Harbor, ME, "Behavioral phenotyping of mutant mice," June 26th, 2002.

61. Cold Spring Harbor Laboratory Mouse Behavioral Analysis Course, Cold Spring Harbor, NY, "Strategies for behavioral phenotyping," June 29th, 2002.

62. Eighth International Summer School on Behavioral Neurogenetics, Worcester, MA, "Behavioral phenotyping of transgenic and knockout mice," August 8th, 2002.

63. University of Massachusetts Neuroscience Seminar, Worcester, MA, "Inhibitory actions of galanin in memory tasks relevant to Alzheimer's disease," September 12, 2002.

64. National Institute on Drug Abuse Lecture Series, Rockville, MD, "Galanin induces performance deficits on learning and memory in rodents," October 2, 2002.

65. National Institute on Alcoholism and Alcohol Addiction Seminar, Rockville, MD, "Strategies for behavioral phenotyping of transgenic and knockout mice," October 24, 2002.

66. Sixteenth Annual Neuroscience Symposium of the Central Virginia Chapter of the Society for Neuroscience, Richmond, VA, "Learning and memory deficits in galanin overexpressing transgenic mice: Relevance to Alzheimer's disease," April 7, 2003.

67. First Annual Meeting of the STAART Autism Research Center, Chapel Hill, NC, "Project IV: Gene dissection of autism-related behaviors in mice," April 9, 2003.

LABORATORY PERSONNEL

CURRENT:

1. HOLMES, Andrew, Postdoctoral Fellow, Visiting Scientist, 1999-present*#
   **** Received NIH Fellows Award for Research Excellence, 2000***
   # ACNP/Bristol-Myers Squibb Travel Award Winner, 2001

2. WRENN, Craige C., Postdoctoral Fellow, Intramural Research Training Award, 1999-present

3. DREILING, Jennifer, Postbaccalaureate, 2003-present.

4. SULLIVAN, Timothy, Technician, 2002-present.

PAST POSTDOCTORAL FELLOWS:

1. DRUGAN, Robert C., 1984-87. Current affiliation: Department of Psychology, University of New Hampshire, Durham, NH
2. KALTWASSER, Maria T., 1985-86. Current affiliation: Berlin-Chemie, Berlin, Germany
3. MASTROPAOLO, John, 1986-88. Current affiliation: Department of Psychiatry, Veterans Administration Hospital and Georgetown University, Washington, DC
4. COTTINGHAM, Sandra L., 1987-89. Current affiliation: Department of Pathology, Spectrum-Health, Grand Rapids, MI
5. AUSTIN, Mark C., 1988-91. Current affiliation: Department of Psychiatry, University of Pittsburgh, Pittsburgh, PA
6. de BARTOLOMEIS, Andrea, 1990-92. Current affiliation: Department of Psychiatry, University of Naples, Italy.
7. CORWIN, Rebecca L., 1991-94. Current affiliation: Department of Nutrituion, Pennsylvania State University, University Park, PA.
8. ROBINSON, John K., 1991-94. Current affiliation: Department of Psychology, State University of New York, Stony Brook, NY.
9. MATHIS, Chantal, 1992-93. Current affiliation: CNRS, Universite Louis Pasteur, Strasbourg, France.
10. HOLMES, Philip V., 1992-95. Current affiliation: Department of Psychology, University of Georgia, Athens, GA.
11. SILLS, Terrence L., 1994-96. Current affiliation: Clarke Institute of Psychiatry, Toronto, Canada.
    **** Received NIH Fellows Award for Research Excellence, 1995***
12. TABER, Matthew, 1996-97. Current affiliation: Bristol-Myers Squibb Inc., Wallingford, CT.
13. PAYLOR, Richard, 1995-98. Current affiliation: Department of Molecular and Human Genetics, Baylor College of Medicine, Houston TX.
14. GLEASON, Theresa, 1997-1998. Current affiliation: Neuroscience Program, Veterans Administration, Washington, DC.
15. McDONALD, Michael, 1994-99. Current affiliation: Department of Pharmacology, Vanderbilt University, Nashville, TN.
    **** Received NIH Fellows Award for Research Excellence, 1997***

16. MIYAKAWA, Tsuyoshi, Visiting Postdoctoral Fellow, 1998-1999. Current affiliation: Center for Learning and Memory, Massachusetts Institute of Technology, Cambridge, MA.
17. KINNEY, Jefferson W., Postdoctoral Fellow, Intramural Research Training Award, 2000-2002. Current affiliation: Department of Neuropharmacology, Scripps Research Institute, La Jolla, CA.

PAST PREDOCTORAL IRTA FELLOW:

LIBBEY, Megan, 1996-97. Current affiliation: Department of Psychology, Graduate School, Boston University, Boston, MA

PAST VISITING SCIENTISTS:

1. ESTALL, Lorna, 1985. Department of Psychology, University of Durham, England, UK.
2. DE WITTE, Philippe, 1988. Department of Psychobiologie, Universite Catholique Louvain, Belgium.
3. LAITINEN, Kirsti, 1988-90. Department of Pharmacology, University of Kuopio, Finland.
4. DE MESQUITA, Susan, 1988-89. Department of Physiology, Marshall University School of Medicine, Huntington, WV.
5. GENC, Ece, 1989. University of Istanbul, Turkey.
6. IISMAA, Tina, 2001. Garvan Medical Research Institute, Sydney, Australia
7. HEILIG, Markus, 2001. Karolinska Institute, Huddinge, Sweden

STUDENT VOLUNTEERS:

1. WHITE, Marsha, 1985, St. Mary's College of Maryland
2. SMITH, Courtney, 1985, Bethesda-Chevy Chase High School
3. KALINA, Ken, 1986, Gustavus Adolphus College, St. Peter, MN
4. KHOSLA, Sareena, 1986-87, Madeira School, McLean, VA
5. RHOW, Ekwan, 1986, Walt Whitman High School, Bethesda, MD
6. UPADYA, Yogita, 1987-88, Madeira School, McLean, VA
7. POTTER, Marie, 1988-90, Trinity University, TX
8. CHI, Angela, 1988, Churchill High School Potomac, MD
9. TURNER, Anne-Marie, 1988-89, Madeira School, McLean, VA
10. REINSCH, Marianna, 1989,West Virginia Wesleyan College, Buckhannon, WV
11. WEST, Howard, 1989, Princeton University, Princeton, NJ
12. TURNER, Eric, 1989, Oregon Health Sciences University School of Medicine
13. MINKUNAS, Darin, 1990, Ohio State University, Columbus, OH
14. BHATIA, Neeti, 1989-90, Winston Churchill High School, Bethesda, MD
15. BROWN, Nathan, 1990, Montgomery Blair High School, Silver Spring, MD
16. HALBERSTADT, Jamin, 1990, Swarthmore College, Swarthmore, PA
17. EVERS, John R., 1989-90, Case Western Reserve University, Cleveland, OH
18. COUNTS, Helen, 1989-90, Madeira School, McLean, VA

19. CHOU, Jeanne, 1990-91, Madeira School
20. FARMER, Charles, 1991, Kenyon College
21. LAWRENCE, Brenda, 1991, Smith College, Northampton, MA
22. HODZIEWICH, Gabriel, 1991-92, St. Andrew's High School (Teacher), Bethesda, MD
23. LAWANDE, Reena, 1991-92, Madeira School, McLean, VA
24. JØRN, Andreas, 1992, Gustavus Aldophus College, St. Peter, MN
25. KOPRIVICA, Vuk, 1992-93 Bethesda-Chevy Chase High School, Bethesda, MD
26. BUCKHOLTZ, Joshua, 1992, Churchill High School, Potomac, MD
27. HIGGINS, Karen, 1992, Colgate University
28. LAM, Natalie, 1992-93, Madeira School, McLean, VA
29. SHADER, David, 1992-93, St. Andrew's High School, Bethesda, MD
30. ROWE, Paula, 1993-94, Spring Valley High School (Teacher), Silver Spring, MD
31. HARDY, Melva, 1993-94, Walter Johnson High School, Bethesda, MD
32. KOPRIVICA, Uros, 1993-94, Bethesda-Chevy Chase High School, Bethesda, MD
33. O'MARA, John, 1993, Colgate University
34. WEDDLE, Meagan, 1993-94, Madeira School, McLean, VA
35. MOORSHEAD, Ashley, 1994-95, Madeira School, McLean, VA
36. CARRILO, Jose Miguel, 1994-95, Albert Einstein High School, Silver Spring, MD
37. McCOMAS, Elena, 1995, Magruder High School (Teacher), Rockville, MD
38. BIZRI, Carolyn, 1995, Boston College
39. DRUMMOND, Melody, 1995, Governors School for Science and Math, Hartsville, SC
40. ONALAJA, Ava, 1995-96, Montgomery Blair High School, Silver Spring, MD
41. KALRA, Simrun, 1995-96, Madeira School, McLean, VA
42. SCHLAIFER, Jonathan, 1996, Montgomery Blair High School, Silver Spring, MD
43. HERSCOVITCH, Penny, 1996, Sidwell Friends High School, Washington, DC
44. MILLER, Katherine, 1996-97, Walter Johnson High School, Bethesda, MD
45. LIGLER, Amy, 1997, Wake Forest University, Winston-Salem, NC
46. BRYANT, Katherine, 1997, Atholton High School, Columbia, MD
47. NGUYEN, Michelle, 1997-98, Albert Einstein High School, Silver Spring, MD
48. ARAUJO, Kristlyn, 1997-98, Seneca Valley High School, Germantown, MD
49. DREILING, Jennifer, 1997-98, Madeira School, McLean, VA,
    1999, 2000, 2001 Wellsley College, Middletown, MA
50. ARIEFF, Alexis, 1998, Ecole Active Bilingue Jeannine Manuel, Paris, France
51. LUO, Mulon, 1998-99, Walt Whitman High School, Bethesda, MD
52. GUTSHALL, Mitchell, 1998-99, Walter Johnson High School, Bethesda, MD
53. DE SOLE, Laura, 1999-2000, Madeira School, McLean, VA
54. YARED, Edom, 1999-2000, Kennedy High School, Silver Spring, MD
55. THAYER, Karen, 2000, Walt Whitman High School, Bethesda, MD
56. YANG, Rebecca, 2000-2001, Spring Brook High School, Silver Spring, MD
57. STAROSTA, Grzegorz, 2000-2001, Rockville High School, Rockville, MD
58. TIGNOR, April, 2000, Cornell University Medical School, New York, NY
59. LONG, Kassy, 2000-2001, Madeira School, McLean, VA
60. HARRIS, Ashley, 2000-2001, Walt Whitman High School, Bethesda, MD
61. SAAVEDRA, Maria, 2001-2002, Walter Johnson High School, Bethesda, MD
62. INNERFIELD, Caitlin, 2001-2002, Sherwood High School, Brookeville, MD
63. VISHWANATH, Janani, 2001-2002, Walt Whitman High School, Bethesda, MD
64. CURLEY, Allison, 2002, Colgate University, Hamilton, NY
65. SCHLOSSER. Sophie, Walter Johnson High School, Bethesda, MD

66. GOLD, Eric, Quince Orchard High School, Gaithersburg, MD